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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/040,888	01/07/2002	Bill M. Culbertson	22727/04083	8873

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EXAMINER

YOON, TAE H

ART UNIT	PAPER NUMBER
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1714

DATE MAILED: 12/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/040,888

Applicant(s)

CULBERTSON ET AL.

Examiner

Tae H. Yoon

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12 November 2004.
2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 11 and 18-36 is/are pending in the application.
4a) Of the above claim(s) 20 is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 11, 18, 19 and 21-36 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

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The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 11, 18, 19 and 21-36 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

The recited molecular weight is indefinite in not specifying a particular average such as a number average molecular weight or weight average molecular weight since it is dependent on the polydispersity. Also, claim 34 (N- in line 2) is incomplete and thus is indefinite.

For example, the example 13 of US 5,369,142 recites a weight average molecular weight (M_w) of 17,000 and a polydispersity of 2.40, and thus a number average molecular weight (M_n) would be about 7,083 since said polydispersity equals M_w/M_n . Therefore, the polymer of said example 13 would meet the instant polymer when the instant molecular weight is a weight averaged, but would fail to meet the instant polymer when the instant molecular weight is a number averaged. This is why the recited molecular weight is indefinite. Furthermore, see table 5 of Xie et al (J.M.S.-Pure.Appl.Chem., A35(10), pp 1615-1629 (1998).

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the

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invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 11, 18, 19 and 21-36 are rejected under 35 U.S.C. 103(a) as obvious over Xie et al (J.M.S.-Pure. Appl. Chem., A35(10), pp 1631-1650 (1998) in view of Culbertson et al (ACS Symposium Series, 755, 2000, pp. 222-232), Culbertson et al (US 5,369,142) or Lu et al (US 2001/0051671 A1).

Following rejection is maintained.

Xie et al teach the instant polymer grafted with 2-isocyanatoethyl methacrylate and glass-ionomer dental restorative compositions in abstract, Figure 1A and 2 and table 1, and at page 1639, lines 17-18. Said table 1 shows MW of 14,800 (Mn) and 45,200 (Mw).

The instant invention further recites calcium fluoroaluminosilicate glass over Xie et al. However, the use of said calcium fluoroaluminosilicate glass in dental composition is a routine practice in the art as taught by Culbertson et al (ACS Symposium Series, page 223, lines 6-7), Culbertson et al (col. 3, lines 43-44 of US 5,369,142) or Lu et al (line 7 of [0044]).

It would have been obvious to one skilled in the art at the time of invention to utilize calcium fluoroaluminosilicate glass taught by Culbertson et al or Lu et al in Xie et al as a glass component since Xie et al teach employing a glass component and since said calcium fluoroaluminosilicate glass is the art well known glass filler for dental compositions.

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Applicant asserts that any combination of references fails to teach or suggest the instant kit, but the examiner disagrees for following reasons: 1. Culbertson et al (ACS Symposium Series) teach blending a liquid monomer with a glass powder at page 225, Formulations, and thus said two components (a liquid monomer and a glass powder) meet the kit. 2. Examples of Culbertson et al (US 5,369,142) and Lu et al (US 2001/0051671 A1) teach a dental composition of a kit comprising a polymerizable monomer and a glass powder.

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tae H Yoon whose telephone number is (571) 272-1128. The examiner can normally be reached on Mon-Thu.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on (571) 272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Tae H Yoon
Primary Examiner
Art Unit 1714

THY/December 14, 2004